

WHAT IS CLAIMED IS:

1. A purified polypeptide comprising an amino acid sequence that is at least 80% identical to the amino acid sequence of SEQ ID NO: 2.

2. The purified polypeptide of claim 1, wherein the amino acid sequence is at least 85% identical to the amino acid sequence of SEQ ID NO: 2.

3. The purified polypeptide of claim 2, wherein the purified polypeptide has phosphoglycerate mutase activity amino acid sequence is at least 90% identical to the amino acid sequence of SEQ ID NO: 2.

4. The purified polypeptide of claim 3, comprising the amino acid sequence of SEQ ID NO: 2.

5. An isolated nucleic acid encoding a polypeptide comprising an amino acid sequence that is at least 80% identical to the amino acid sequence of SEQ ID NO:2.

6. The isolated nucleic acid of claim 5 wherein the amino acid sequence is at least 85% identical to the amino acid sequence of SEQ ID NO:2.

7. The isolated nucleic acid of claim 5 wherein the polypeptide has phosphoglycerate mutase activity.

8. An isolated nucleic acid encoding the polypeptide of claim 4.

9. An isolated nucleic acid comprising the nucleotide sequence of SEQ ID NO:3.

10. The isolated nucleic acid of claim 5, further comprising a heterologous promoter operably linked to the isolated nucleic acid.

11. A method of screening for a compound that binds to a PGM-like polypeptide, the method comprising:

(a) providing a polypeptide comprising an amino acid sequence that is at least 85% identical to the amino acid sequence of SEQ ID NO:2 and has phosphoglycerate mutase activity;

(b) contacting a test compound to the polypeptide; and

(c) measuring binding of the test compound to the polypeptide.

12. The method of claim 11, further comprising:

(d) measuring a phosphoglycerate mutase activity of the polypeptide in the presence of the test compound.

13. The method of claim 11, further comprising:

(e) providing a second polypeptide, wherein the second polypeptide comprises the amino acid sequence of a plant or mammalian phosphoglycerate mutase;

(f) contacting the test compound to the second polypeptide; and

(g) measuring binding of the test compound to the second polypeptide.

14. A method of screening for a compound that alters the activity of an PGM-like polypeptide, the method comprising:

(a) providing a polypeptide comprising an amino acid sequence that is at least 85% identical to the amino acid sequence of SEQ ID NO:2 and has phosphoglycerate mutase activity;

(b) contacting a test compound to the polypeptide; and

(c) measuring a phosphoglycerate mutase activity of the polypeptide, wherein a change in phosphoglycerate mutase activity relative to the phosphoglycerate mutase activity of the polypeptide in the absence of the test compound is an indication that the test compound alters the activity of the polypeptide.

15. The method of claim 14, further comprising the steps of:

(d) providing a second polypeptide, wherein the second polypeptide comprises the amino acid sequence of a plant or mammalian phosphoglycerate mutase;

(e) contacting the test compound to the second polypeptide; and

5 (f) measuring a phosphoglycerate mutase activity of the second polypeptide.

16. An antibody that binds specifically to a polypeptide consisting of SEQ ID NO: 2.

17. The antibody of claim 16, wherein the antibody does not bind to a polypeptide consisting of the amino acid sequence of SEQ ID NO: 4

10 18. An isolated nucleic acid that hybridizes under high stringency conditions to a nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO: 1 and encodes a polypeptide consisting of 520 to 530 amino acids.